



United States Department of Agriculture  
Animal & Plant Health Inspection Services



# Standard Design Criteria at International Airports, Cargo and Seaport Facilities

## FORWORD

The Animal Plant Health and Inspection Services, Department of Agriculture has developed these Guidelines to assist airport, cargo and seaport (maritime) authorities in planning new or renovating existing passenger and cargo processing facilities in the overseas ports of entry into the United States. The information presented should be used in conjunction with the material contained in the Federal Inspection Services' airport Facility Guidelines, March 2000 Edition,

On occasion, the design guidelines described herein may be modified by the APHIS Department of Agriculture when it has been determined that a particular change will better facilitate local APHIS field operations.

At the conclusion of the project design and when the final construction documents have been completed, the airport, cargo and seaport authorities must secure written plan approval from the USDA-APHIS Inspection services and other governing agencies. Verbal approvals are never given and therefore should not be accepted. Submit all plans to the APHIS Department of Agriculture national headquarters for approval with copies to the local port director where the new or renovated facility will be located. Local representatives of the APHIS are not authorized to grant final approval for drawings on new or renovated facilities.

## Laws and Regulations

The APHIS, Department of Agriculture, provides inspection services for all aircraft, crew, passengers, stores and cargo arriving from foreign countries into the United States, its territories and possessions or departing from Hawaii, Puerto Rico, Guam and the U.S. Virgin Islands destined for the US mainland. The purpose is to protect American agriculture by preventing the introduction of injurious plant and animal pests and diseases not previously known to occur in the United States.

## Purposes

Government procedures applicable to the clearance of aircraft, passengers, crew, baggage and cargo arriving at ports of entry are the outgrowth of United States law, administrative regulations, bilateral treaties and experience.

- a. Space counters, conveyors and inspection booths for the processing of passengers and baggage arriving on international flights must be provided without cost to the inspection agencies. The physical characteristics of the inspection areas are discussed and delineated in terms of passenger and baggage flow and terminal building space utilization.
- b. The APHIS agency has no authority over the construction of airports, cargo and seaports but is equally responsible for designating the aforementioned ports for international arrivals, approving the design of the inspection facilities and providing inspection services. Space for the processing of arriving international passengers and baggage as well as the required offices, inspection booths, counters, conveyors, x-ray systems and other equipment necessary to support the monitoring, control and operations of the inspection facility must be provided without cost to the APHIS agency.
- c. In making use of the design guidelines material, it should be recognized that variations in local conditions may require special considerations to be incorporated into one facility but not in another. Among the factors considered are the location of the airport, passenger origination and peak hour passenger volume. For modification of existing facilities, APHIS is willing to make accommodations. However, any adjustments to the specifications must be fully justified and not have an adverse effect on the missions of the APHIS agency. Use of this material by airport authorities in consultation with APHIS headquarters

- personnel, local APHIS personnel, airline representatives and architect in the early stages of planning and during construction of the airport terminal building is **imperative** to ensure that all agency requirements are met.
- d. This document is intended as a guideline for high level planning purposes. Airport authorities, operators, contractors and/or architects must establish at the earliest planning stages, and maintain throughout the process, contact with the APHIS agency and all other Federal Inspection Services agencies. This is important not only to ensure that the FIS agencies can better perform their mission; but such coordination in facility construction and design will benefit both the airport and international carriers through improved processing times, greater security and more efficient use of airport facilities.
  - e. There will be airport facilities that will not have representation by all FIS personnel or be considered as a staffed port in the future. It is important that the National Headquarters of each agency be consulted prior to planning or remodeling of these facilities to determine if space is required by each FIS agency.
  - f. These guidelines include information on APHIS pre-departure facilities located in U.S. territories and other possessions.

## **1. INTRODUCTION**

### **1.1 General**

#### **1.1.A.**

This document contains information intended as minimum standards for construction for the APHIS Department of Agriculture inspection facilities located at the international ports of entry in the United States and U.S. territories. For brevity and convenience, these standards are presented in language commonly used in the construction industry. The use of words such as *shall* means that it is mandatory where applied by an authority having jurisdiction at the project location. The Design and construction shall conform to the requirements of these Guidelines. Local building codes and regulations shall apply for items not covered in these Guidelines.

#### **1.1.B.**

This document covers the APHIS Department of Agriculture inspection facilities located in the international airports passenger and cargo and also the seaports of entry into the United States. Other facilities may require special consideration but the sections within these guidelines may be used in other pathways for air, water and land (including railroad, international mail facilities where appropriate.

#### **1.1.C.**

It is important to note that design and construction techniques may be improved upon as long as the respective intent or objectives have been met. Final implementation may be subject to the approval of the authority having jurisdiction.

#### **1.1.D**

Some projects may have to be coordinated with the Federal Inspection Service (FIS), Immigration and Naturalization Service (INS), the US Customs Service (USCS) and the Fish and Wildlife Service (FWS). Individual project requirements should be coordinated at each project location.

### **1.2 Renovation**

### **1.2.A**

All new work or additions, or both, shall comply, wherever practical, with the applicable sections of these Guidelines. Exceptions should be considered where compliance to the Guidelines is not feasible.

### **1.2.B.**

When construction is completed, the renovated space should satisfy the functional requirements set forth in the Guidelines.

## **2.0 EQUIPMENT**

### **2.1 General**

#### **2.1.A.**

A list of equipment necessary to operate the facility shall be included in the contract documents. This list will assure the coordination of the acquisition, installation and relocation of equipment.

#### **2.1.B.**

Installation of equipment that requires dedicated building services, or special structures, shall be included in the drawings. Where required, adjustments shall be made to the drawings once the equipment selection has been made.

### **2.2 Classification**

Careful planning will be necessary in order to fit the equipment in the required space available for the inspection facility. The equipment used in these inspection facilities shall be classified as fixed or movable equipment.

#### **2.2.A Building Service Equipment**

These shall include the items for heating, ventilating and air conditioning, humidification, filtration, electrical power distribution, emergency power generation and other equipment, including communication equipment.

#### **2.2.B Fixed Equipment**

**2.2.B.1** Fixed equipment includes items that are permanently connected to a service distribution that is designed and installed for the specific use of the equipment.

a. Fixed equipment may include, but is not limited to, imaging equipment, communication systems, grinders ("muffin monsters") and built-in casework.

#### **2.2.C. Movable Equipment**

**2.2.C.1.** Movable equipment includes items that require floor space, electrical and/or mechanical connections but are portable. These items may be wheeled office furniture and monitoring equipment, movable x-ray and other portable pieces of equipment.

## **2.3 Major Technical Equipment**

Major technical equipment is specialized equipment that is usually installed by the manufacturer or vendor. Since this type of equipment may require special structural, electromechanical requirements or other considerations, close coordination between all the disciplines, including the owner is required.

## **2.4 Equipment Shown on Drawings**

Equipment that require mechanical or electrical service connections or construction modifications and are not included in the construction contract shall be identified on the design development documents to provide coordination with the architectural, mechanical, plumbing and electrical phases of the construction.

## **2.5 Electronic Equipment**

Computers and other electronic equipment shall be protected from power surges and spikes that could cause damage and affect programs. Consideration should also be given to the addition of a constant power source to prevent loss of data necessary for the proper functioning of the departments where information is critical.

## **2.6 Airport Systems**

The following is a list of Systems that should be considered in developing Airport projects.

- Cellular/Wireless Communications, including antenna systems
- Paging (Audio & Visual), shared with other FIS Agencies
- Multi-User Flight Information Display Systems (MUFIDS), including Baggage, Gates, etc. Should also be located in the back offices (there should be at least 12 or more units of the display systems)
- UPS (Uninterrupted Power Service) – Verify the amount of time required for the UPS operation
- Internet/Intranet
- Network Remote Access – Provide Four (4) monitors with keyboard controls
- Telephone – Coordinate with the airport to determine the correct type of telephone service to be used that is compatible to the main telephone service

## **3.0 DESIGN REQUIREMENTS**

### **3.1 General Design Information**

- a. In numerous instances, international passenger volume has rapidly outgrown terminal facilities. The likelihood of this occurring can be reduced when planning new facilities by using the annual FAA's Aviation forecasts of projected peak traffic increases for a five or ten-year period.
- b. It is fully recognized that at the time of construction, it may be unnecessary or economically undesirable to initially build a terminal that will meet long-term passenger volume projections. In these circumstances, the initial plan should take into account the need for future expansion. Any additions to the terminal can be carried out without interfering with the daily operation of existing facilities.
- c. Where practicable, local facilitation committees made up of representatives of each FIS agency, airlines and airports may be helpful in assuring that an optimum building layout,

- including aesthetic considerations, will be achieved whenever a new or redesigned airport terminal facility is to be constructed.
- d. Representatives of the national headquarters of the APHIS will also participate in this process and must be consulted when planning new facilities or modifications of existing ones. Preliminary plans should be submitted to the national headquarters of the APHIS and their architectural staff for review and comment before final drawings are started.

## 3.2 Specific Design Criteria

### Airport

- a. Animal and Plant Health Inspection Service personnel examine cargo and aircraft for agricultural interest and conduct secondary passenger baggage inspections for prohibited or regulated agricultural material. The secondary inspection area must accommodate:

- 1) APHIS work stations
- 2) APHIS secondary counters with easy access to the workstations. The use of stainless steel counters and counters with tubular single-directional roller bars are acceptable. The APHIS Port Director will determine the option. Adequate under-counter storage will be provided for the temporary safeguarding of contraband and the storage of inspection tools and supplies. The APHIS secondary booth will house a computer monitor, COU, mouse and keyboard. These booths will provide access to the telecommunication systems. Provisions for electrical/ signal line hook-ups and cable conduits and conduits for Closed Circuit Television monitors (CCTV) must be provided as part of the facility.
- 3) Areas for the installation of xray units with room for queuing of passengers, inspection and baggage handling. The purchase of the x-ray units will be discussed before the plans are approved by APHIS. The x-ray equipment includes: inspection tables, with stainless steel roller ball counter tops and roller tables at no cost to the APHIS. Integrated equipment for new facilities will be purchased by the airlines or the facility if such equipment is determined to be in the best interest of processing passengers more effectively and more expeditiously.
- 4) Signs over the APHIS Secondary area are required to read "AGRICULTURAL ARTICLES TO DECLARE".
- 5) Adequate glare-free lighting shall be provided at inspection points and in examination rooms, preferably indirect lighting of not less than **110** foot-candles. Additional lighting is required over the inspection tables located after the baggage x-ray equipment. Rubberized cushioned finish flooring must be provided for the inspection and x-ray counter areas. All telecommunication/computer networks and other necessary equipment must have uninterrupted electrical power back-up generator units.
- 6) The APHIS inspection facility must be located on one floor of the terminal building, preferably on the same level as the passenger arrival area. The provisions must meet all the requirements of the Americans with Disabilities Act (ADA).

- b. Office Area

- 1) The APHIS office area must include a separate section for Supervisors, Directors and the Canine office areas.

- 2) The space and facilities, from which the APHIS operates, must be located adjacent to the baggage inspection area. The office must have physical and visual access to the baggage inspection area. A window with blinds or curtains is required in the wall between the office and baggage inspection area. An audio/visual call system linked to the United States Customs Service (USCS) primary and secondary inspection areas should be located in this office. At high volume airports, where it is necessary to have an airport Port Director, additional office space should be provided for him/her and a secretary. Additional office space must be provided for first line supervisors. A flight information system approved by local APHIS management will be necessary to provide aircraft boarding support. Communications and electrical connections and space for a computer must be available. In addition, cable connections must be provided for a CCTV monitor.
- 3) The canine office area should include the space needed to store the different (target, non-target, etc.) training bags and supplies. The canine office space must have independent controls for heating and air-conditioning and a water source. Locations that are, or will be, utilizing detector dog teams must provide a small climate-controlled room to accommodate the detector dogs (Beagle brigade) during rest periods and/or down-time. Communications and electrical connections and space for a minimum of two computer stations must be available.

c. Laboratory Requirements

The APHIS office area and laboratory shall be separated with a full partition and a door. There shall be access to the laboratory from the aircraft gate area to enable secure movement of contraband from the aircraft to the laboratory. Adequate lighting and electrical outlets are required. The special equipment that must be provided as part of the APHIS laboratory space consists of the following:

- 1) Double drain board and stainless steel sink
- 2) Under counter storage cabinets and above counter shelving or storage cabinets. An adequate amount of open under counter storage areas must also be provided.
- 3) Commercial type, heavy-duty garbage disposal unit (size requirement is based on peak hour passenger criteria).
- 4) Locker and toilet room facilities with showers for male and female employees
- 5) Countertop workspace, preferably 36" deep, for microscopes, computers, etc.
- 6) Adequate space must be provided for the installation of a refrigerator to safeguard contraband intended for extensive inspections or for overnight storage for inspections on the following day.
- 7) The laboratory and grinder (commonly known in the APHIS as the "Muffin Monster") for contraband must be in a separate room and have a 6" drain line.
- 8) A separate vented room must be available to house, for temporary placement, transit pet birds where birds are frequently intercepted.
- 9) The laboratory must be cleaned daily or more frequently if required (i.e. when high volumes of contraband are processed).

d. Approval Requirements for Garbage and Refuse Disposal Facilities.

APHIS approval of proposed projects are subject to availability of adequate international aircraft garbage and refuse disposal facilities. Adequate facilities consist of either, an incinerator (reduce garbage to ash), garbage cooking or sterilizing apparatus (heating garbage to 212 F for 30 minutes) or equipment that grinds garbage and refuse for discharge into an approved sewage system. The system or combination of systems selected must be capable of handling on a daily basis all the garbage and refuse from

arriving international carriers. The sewage system utilized by the airport, as well as the method of collection and transport of the garbage and refuse, must be approved by APHIS. Disposition of any part of foreign garbage at landfills will not be approved unless it has first been processed in an acceptable manner. Without approved garbage handling facilities, no galley cleaning or catering will be allowed, and aircraft must move after passenger disembarkment to an approved airport or foreign destination. The airport authority is responsible for removal and disposal of contraband generated from aircraft and passenger baggage. An approved hazardous waste haulage company may also be utilized as an alternative to on-site garbage destruction. The removal and disposal must meet USDA approval.

e. Canine Office Area

Locations that are, or will be using passive detector dog teams (the Beagle brigade) should provide for a climate-controlled room with 100% outside air in which to place the detector dogs during rest periods or down-times. The room should comply with AAALAC (American Association for Accreditation of Laboratory Animal Care) Guidelines. Rooms should have floor drains and sinks, require low-maintenance, and be easily cleaned. In addition, two small rooms (approximately 4'-0" x 4'-0") for the storage of APHIS training materials must be provided within the APHIS area. A canine facility must be constructed when there are four or more detector dog teams.

## **4.0 INSPECTION SEQUENCE WITHIN THE UNITED STATES**

### **4.1 APHIS Primary Inspection**

- a. After passengers claim their baggage, they may exit the APHIS inspection if not directed to undergo an APHIS secondary examination
- b. Screening podiums must be provided where deemed necessary for APHIS officers to assess arriving passengers.
- c. Procedures for access by the Roving inspectors must also be provided

### **4.2 APHIS Secondary Inspection**

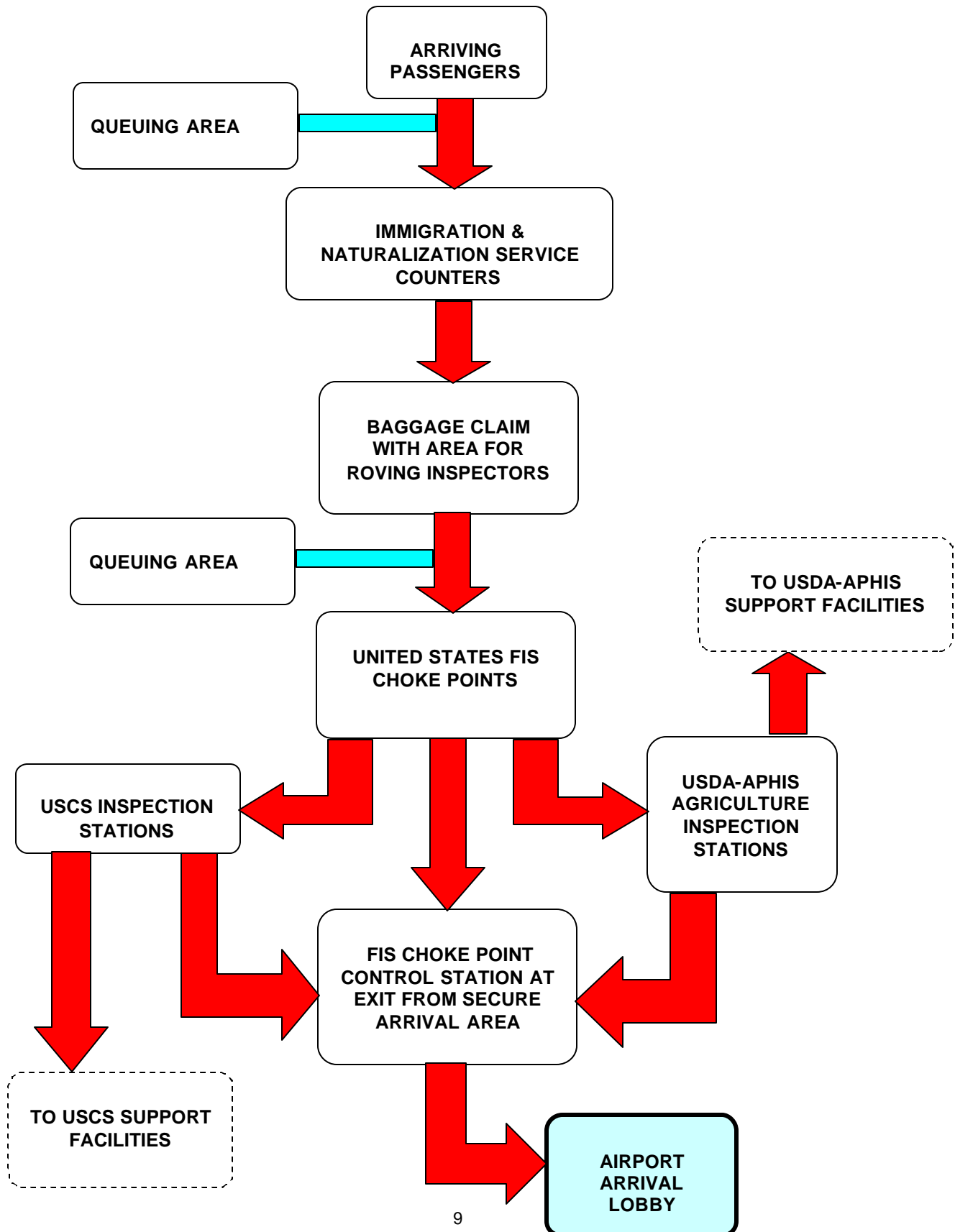
- a. Passengers who require additional APHIS processing are referred to the APHIS secondary counters or x-ray areas. The inspection area should include adequate queuing space for secondary inspection and sufficient signage to direct passengers to the APHIS secondary inspection area. In addition, a baggage handling system (mechanical or human resource) shall be provided to facilitate the processing of passenger baggage through the APHIS secondary inspections.
- b. Upon completion of the secondary examination, the passengers will proceed to the exit. Passengers designated for mutual USCS, APHIS and USFWS exams are generally processed at only one of the secondary areas with all agencies in attendance.

### **4.3 Conceptual Passenger Flow Diagrams for Arriving International Passengers**

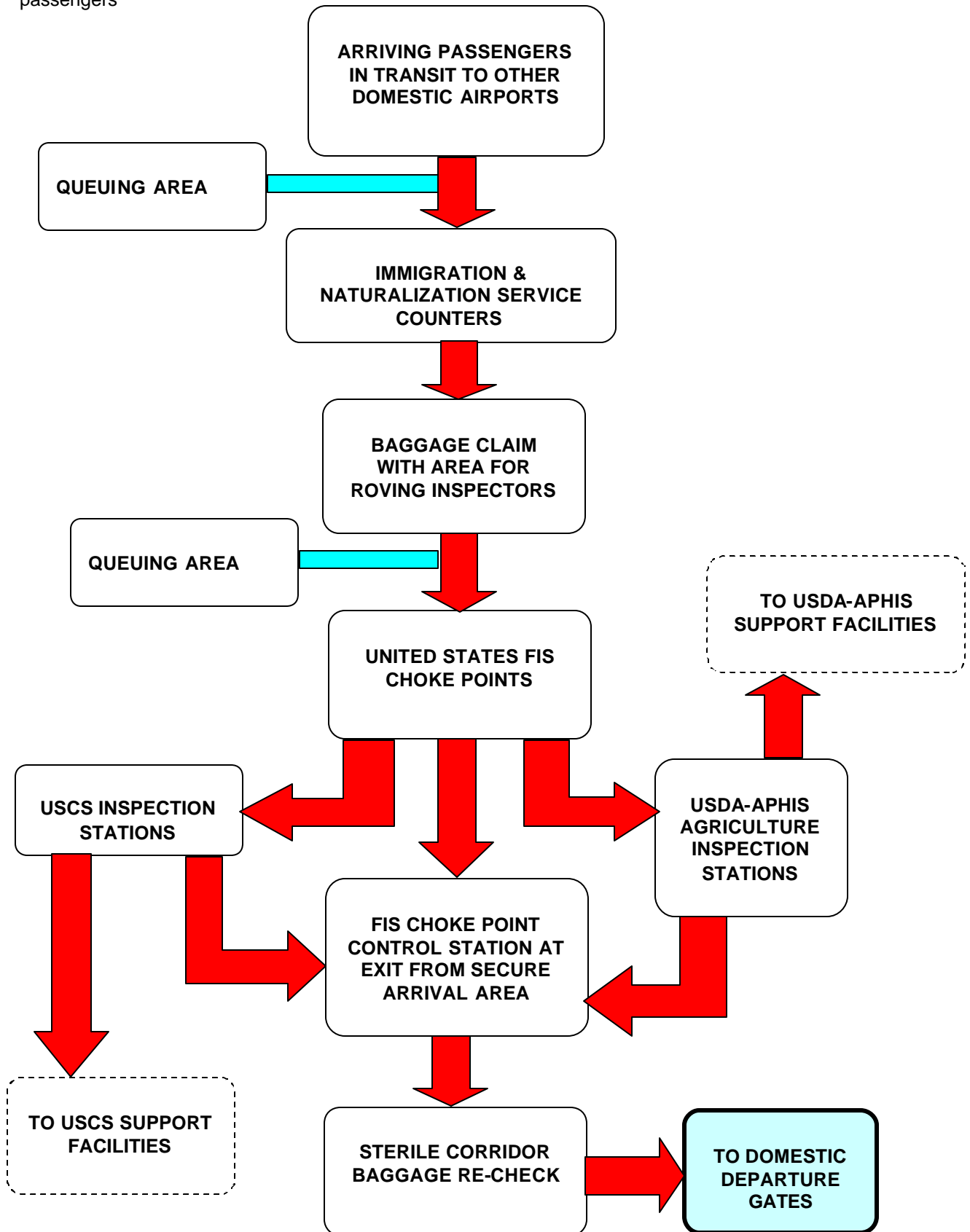
The following pages illustrate the preferred planning passenger flow diagram layouts for international arriving passengers where the airports are the final port of entry and where airports are transit facilities only.



A. Preferred Layout when the airport is the final Port of Entry for the arriving International passengers



B. Preferred Layout when airport is only a Transit Area Port of Entry for arriving International passengers



## **5.0 PREDEPARTURE GUIDELINES**

### **5.1 Definition**

Pre-departure is defined as the clearance, only for agricultural purposes at non-foreign offshore locations, for aircraft, passengers and crew entering the contiguous United States or other possessions of the United States.

### **5.1 Design Requirements**

- a. In inspection facilities located, but not limited to the following airports; Puerto Rico, Hawaii, Guam and the US Virgin Islands, pre-departure baggage, cargo and other similar items are subject to inspection by the USDA-APHIS (Animal Plant Health Inspection Services). Airline passengers whether in-transit or originating from the airports previously listed, must pass through the pre-departure inspection stations prior to checking-in at the airline counters or proceeding to the secured gate departure area.
- b. The USCS (US Customs Service) and the FAA (Federal Aviation Administration) may also utilize the equipment and facilities located at the pre-departure inspection stations and therefore adequate space must be incorporated in the design of the area when they are included in this process. The FAA may, at the option of the airport director, decide that baggage inspection be located in an area away from public view after the baggage has been checked-in by the airline personnel.
- c. At airports, where pre-departure inspection is required, air-conditioned work areas, adequate examination counters (configured to support x-ray systems required by APHIS), queuing space, checked baggage security and accompanying office laboratory facilities must be provided. All costs for x-ray systems will be provided at no cost to APHIS. The x-ray system includes inspection tables, roller top tables and up and down baggage ramps to accommodate baggage.
- d. Planning must be initiated at an early stage since human resources may determine the amount of flexibility APHIS can allow. Multiple inspection points within a facility must have prior approval from APHIS headquarters.
- e. It is the responsibility of the Design professional to obtain the necessary information from the appropriate FIS (Federal Inspection Services) agencies to determine the requirements for each particular site.

### **5.2 Specific Design Criteria**

- a. APHIS personnel examine baggage in pre-departure locations previously listed to look for prohibited or regulated agricultural material. The inspection area must include:
  - 1) APHIS work stations
  - 2) APHIS secondary counters with easy access to the workstations. The use of stainless steel counters and counters with tubular single-directional roller bars are acceptable. The APHIS Port Director will determine the option. Adequate under-counter storage will be provided for the temporary safeguarding of contraband and the storage of inspection tools and supplies. The APHIS secondary booth will house a computer monitor, CPU, mouse and keyboard. These booths will provide access to the telecommunication systems. Provisions for electrical/ signal line hook-ups and cable conduits and conduits for Closed Circuit Television monitors (CCTV) must be provided as part of the facility. Additional space should be provided for the USCS and the FAA personnel if it is determined that they will be participating in pre-departure inspections.

- 3) Areas for the installation of x-ray units with room for queuing of passengers, inspection and baggage handling. The purchase of the x-ray units will be discussed before the plans are approved by APHIS. The x-ray equipment includes: inspection tables, with stainless steel roller ball counter tops and roller tables at no cost to the APHIS. Integrated equipment for new facilities will be purchased by the airlines or the facility if such equipment is determined to be in the best interest of processing passengers more effectively and more expeditiously.
  - 4) Signs over the APHIS Pre-Departure inspection area are required to read "AGRICULTURAL ARTICLES TO DECLARE".
  - 5) Adequate glare-free lighting shall be provided at inspection points and in examination rooms, preferably indirect lighting of not less than **110** foot-candles. Additional lighting is required over the inspection tables located after the baggage x-ray equipment. Rubberized cushioned finish flooring must be provided for the inspection and x-ray counter areas. All telecommunication/computer networks and other necessary equipment must have uninterrupted electrical power back-up generator units.
  - 6) The APHIS pre-departure inspection station(s) must be located in the area(s) before the airline check-in counters. The provisions must meet all the requirements of the Americans with Disabilities Act (ADA).
- f. Existing Airport Facilities
- 1) Sufficient space must be incorporated in the design, as far as practicable in existing airports, for the queuing of passengers and their baggage in front of the pre-departure inspection stations.
  - 2) Sufficient space must also be provided in front of the airline passenger and baggage check-in counters to accommodate the inspection stations and also for the queuing of passengers who will be waiting in line after the inspection to check-in for their flights.
- g. New Airport Facilities
- 1) For new airport facilities requiring Pre-Departure Inspection Stations that are in the early stages of design, adequate areas should be included in the program to accommodate the space requirements for the Inspection stations. The areas are usually determined by the type of x-ray inspection equipment to be utilized in addition to the adjacent required spaces.
  - 2) The number of Pre-departure Inspection Stations is determined based on the expected passenger volume. It is expected that all U.S. bound passengers must go through the pre-departure inspection station(s). The design professionals should verify these requirements with the appropriate FIS agencies.

### **5.3 Pre-departure Clearance Process**

- a. A pre-departure clearance for agricultural purposes is presently carried out at non-foreign offshore locations in Puerto Rico, Hawaii, Guam and the U.S. Virgin Islands. This clearance includes examination of passengers' baggage, cargo and the aircraft's quarters, stores and cargo pits. APHIS personnel usually conduct Pre-Departure inspections in Puerto Rico, Hawaii, Guam and the U.S. Virgin Islands.

### **5.4 Approaches to Inspection Area**

Before check-in, all passengers and their carry-on baggage are directed to an area for inspection of baggage that may contain agricultural items.

### **5.5 Baggage Delivery**

Baggage is marked with stickers or by some other means to indicate that the APHIS inspection has taken place. Upon completion of the APHIS clearance procedures, passengers are required to check their baggage with the airlines. The luggage goes to a sterile holding area until it is ready for loading onto the departing aircraft. Movement of the baggage to the aircraft must be under physical and procedural controls as deemed necessary by APHIS to insure security.

### **5.6 Sterile Waiting Area for Passengers**

Upon completion of APHIS processing, cleared passengers will be allowed to remain in a sterile waiting area until time for boarding the aircraft. Persons visiting with passengers before departure in the sterile area will be required to complete APHIS processing prior to entering this area. Shops, restaurants and bars will not be allowed to sell prohibited agricultural items in the sterile area.

### **5.7 Passage to Aircraft**

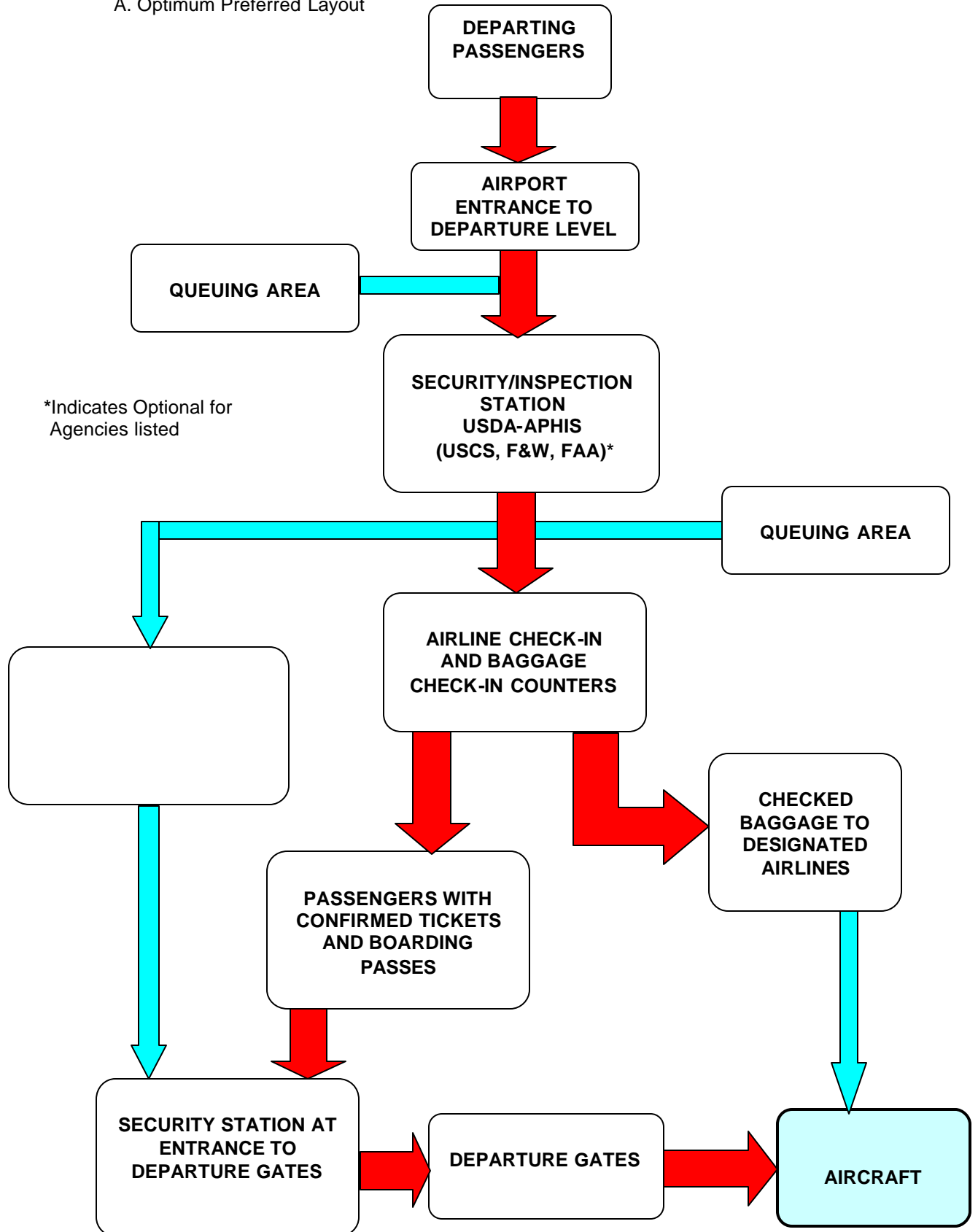
The enplaning of passengers and the loading of baggage must be accomplished in such a manner as to prohibit contact with unauthorized persons or objects as the passengers proceed from their respective sterile areas to the aircraft.

### **5.8 Conceptual Passenger Flow Diagrams for Pre-Departure Inspection**

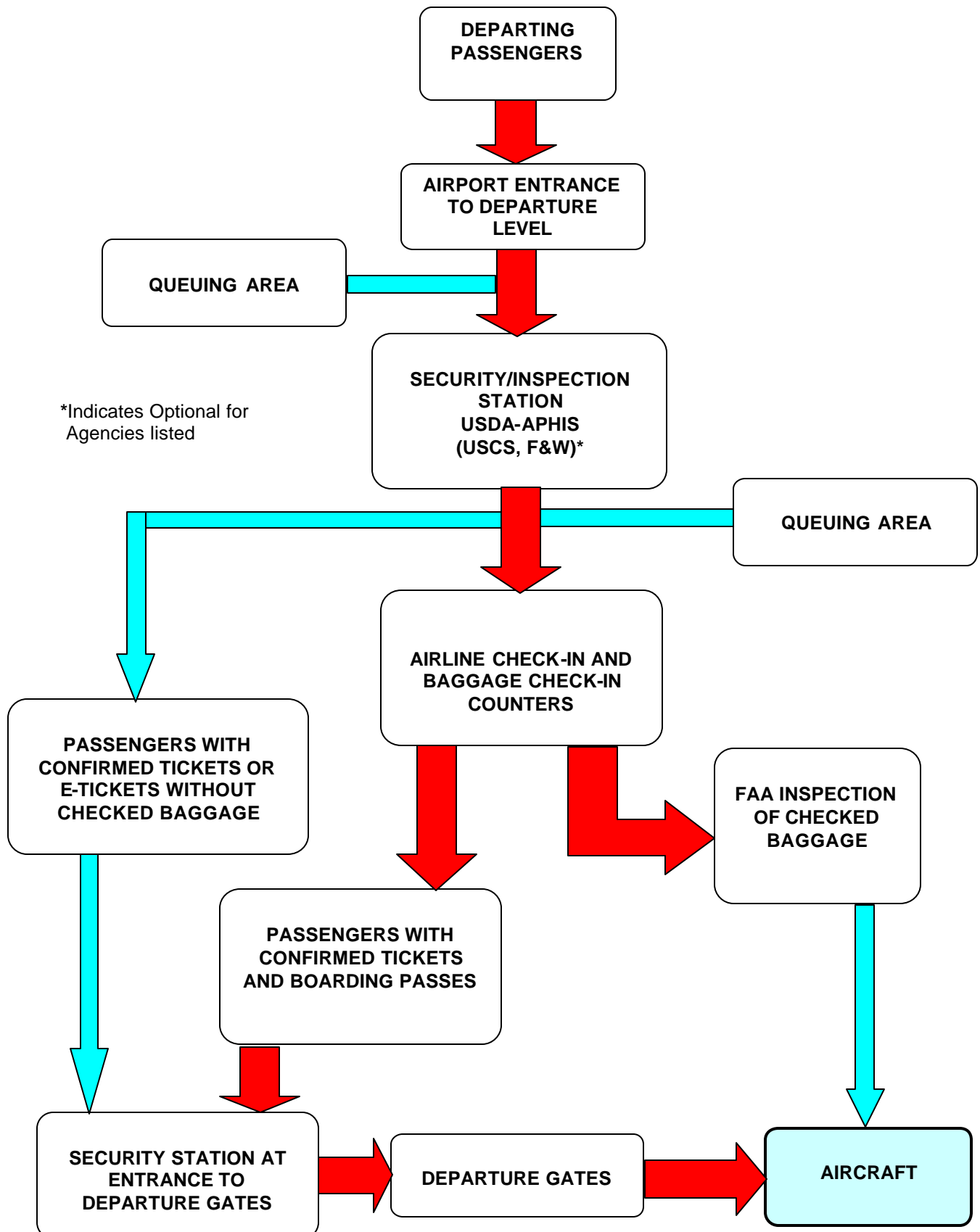
The following pages illustrate the optimum and minimum conceptual preferred layouts for designing the pre-departure inspection stations.

## 5.9 Conceptual Passenger Flow Diagrams for Pre-Departure Inspections

### A. Optimum Preferred Layout



B. Minimum Preferred Layout



#### **Table of Additional Requirements:**

#### **FEDERAL INSPECTION SERVICES SPACE and FACILITY REQUIREMENTS at INTERNATIONAL AIRPORTS**

(Note: The provided space tabulations located in the following pages are for information and planning purposes only and should not be used in the preparation of Concept or Design. Rather, the Design Agent should contact the appropriate FIS agency representative for specific requirements particular to that site)

#### **Laboratory Requirements:**

Stainless steel countertop with a rolled lip edge and with a minimum 18" high stainless steel backsplash, stainless double sink with drain board, minimum 2 HP garbage disposal unit (also known as a 'Grinder'), under counter cabinets (with and without cabinet doors), counter space for microscope and identification work (minimum depth of counter to be 30"), lockers, electrical, data and telephone outlets.

#### **METHODS AND PROCEDURES X-RAY FACILITY DESIGN**

International:

The following pages include examples of floor plans for Xray inspection areas at international airports. Use the following diagrams as references in designing the floor plans for X-ray inspection areas (See figures 2.3.1 to 2.3.12)